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16. The method of claim 14, wherein the first predefined distance is the same as the second predefined distance.

17. The method of claim 10, further comprising:

determining that the client device lacks network connectivity;

responsive to determining that the client device lacks network connectivity, caching a message indicating that the user has entered the location associated with the credential for subsequent transmission to a server when network connectivity is restored;

determining that network connectivity has been reestablished; and

responsive to determining that network connectivity has been reestablished, sending the cached message to the server.

18. The method of claim 10, further comprising outputting, at the client device, the representation of the credential in a manner that enables the credential authority to validate the representation.

19. A system comprising:

one or more computers and one or more storage devices storing instructions that are operable, when executed by the one or more computers, to cause the one or more computers to perform operations comprising:

storing, at a client device, a credential identifier associated with a user identifier and a location;

receiving, at the client device, a request to output a graphical representation of the credential in a manner that enables a credential authority to validate the graphical representation;

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responsive to receiving the request to output the graphical representation of the credential:

obtaining, at the client device, a time measured by a timing device of the client device;

generating, at the client device, the graphical representation of the credential based on the credential identifier and the time;

outputting, to a display of the client device, the generated graphical representation in a manner that enables the credential authority to validate the credential by visual inspection of the generated graphical representation;

obtaining a location of the client device;

determining that the location of the client device is within a predefined distance of the location associated with the credential;

responsive to determining that the location of the client device is within the predefined distance of the location associated with the credential, storing, in a memory of the client device, data indicating that the user has entered the location associated with the credential.

20. The system of claim 19, wherein the operations further comprise transmitting, from the client device to a server, a message indicating that the user has entered the location associated with the credential.

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